

REMARKS

Claims 1, 3-18, 20 and 21 are pending in this application. By this Amendment, claims 1, 5, 6, 8, 9, 14, 15, 18, 20 and 21 are amended to correct informalities. No new matter is added. Claims 13-18 and 20 are currently withdrawn. At least claims 13-17 should be rejoined and allowed upon allowance of independent claim 1, from which these claims depend. A Request for Continued Examination is attached. Reconsideration of the application in view of the above amendments and following remarks is respectfully requested.

The Office Action objects to claim 21 because of informalities. The objection is obviated by the amendment to claim 21. Accordingly, withdrawal of the objection is respectfully requested.

The Office Action rejects claims 1, 3-6, 8, 9 and 21 under 35 U.S.C. §103(a) over U.S. Patent Application Publication No. 2002/0098393 A1 to Dine et al. (Dine), in view of the Fuel Cell Handbook (FCH). The rejection is respectfully traversed.

The combination of Dine and the FCH would not have rendered obvious a power supply system for outputting power having a (1) purge decision unit that, once power generation in a fuel cell stops, decides whether a purge condition under which a purge gas should be supplied to an anode side of the fuel cell is met, and (2) a purge controller that, in an event that the purge decision unit decides that the purge condition is met, actuates a purge gas feeder to replace a hydrogen-containing fuel gas within the fuel cell with a purge gas devoid of hydrogen, or in an event that the purge decision unit decides that the purge condition is not met, does not actuate the purge gas feeder, as recited in independent claim 1.

Dine discloses a procedure for shutting down an operating fuel cell system with a dead end anode (see Abstract). Dine discloses that when the operation of a fuel cell system is shut down, the primary load is disconnected from the fuel cell system and a supply of air to the cathode is halted. The fuel cell system is then connected to an auxiliary load and a supply of

a hydrogen-containing fuel gas to the anode is stopped (see paragraph [0006]). However, in Dine, the hydrogen-containing fuel gas continues to circulate in the anode. Therefore, the hydrogen in the fuel gas continues to be slowly consumed. When the hydrogen concentration of the circulating hydrogen-containing fuel gas falls below a certain level, the circulation is stopped (see paragraph [0015]). That is, Dine teaches eliminating the need for a purge process with a purge gas that is devoid of hydrogen (see paragraph [0005]).

Dine discloses that the shutdown procedure can be completed without the use of a hydrogen-devoid gas purge and without generating a hydrogen/air front within the anode flow field (see paragraph [0014]). That is, Dine does not supply air to the anode side of the fuel cell as a purge gas devoid of hydrogen, as recited in independent claim 1 (see paragraph [0014]). This is because, as noted above, Dine merely discloses a hydrogen-containing fuel gas recycling fuel system with a hydrogen concentration reduction process with a focus on the hydrogen-containing fuel gas circulation.

The Office Action asserts that the air source 142 of Dine is connected to burners 151 and that the air that passes through burners 151 is fed to anode 104. However, the burners 151 are provided to consume the hydrogen in the anode exhaust gas. Therefore, the air is fed to the burners 151 only for burning the hydrogen, not to feed a hydrogen devoid purge gas to the anode 104 (see paragraph [0040]). As indicated above, Dine discloses recirculating hydrogen-containing fuel gas in the anode for some time after the operation of the fuel cell stops (see paragraph [0015]), not feeding a hydrogen devoid purge gas to the anode side of the fuel cell.

The burners 151 of Dine could not reasonably be used to carry out the hydrogen removal in the present application, because unlike the present application, Dine discloses feeding hydrogen to the burners 151 (see paragraph [0040]).

Dine teaches that it is undesirable to use a hydrogen devoid purge gas, such as nitrogen or other inert gas, for fuel cells where compactness and service interval of the fuel cell powerplant is important, such as for automotive applications (see paragraph [0005]). Therefore, Dine also fails to disclose a power supply system for outputting power having a purge gas feeder that is connected to a mixer and feeds a purge gas devoid of hydrogen, as recited in independent claim 1.

The FCH fails to overcome the deficiencies of Dine with respect to the above-mentioned features of independent claim 1, and is only applied for allegedly disclosing a hydrogen permeable metal layer. Accordingly, independent claim 1 is patentable over the applied references.

Claims 3-6, 8, 9 and 21 depend from independent claim 1. Therefore, these claims are also patentable over the applied references based at least on their dependency, as well as for the additional features these claims recite. Accordingly, withdrawal of the rejection is respectfully requested.

The Office Action rejects claim 7 under 35 U.S.C. §103(a) over Dine in view of the FCH, and further in view of U.S. Patent Application Publication No. 2004/0033395 A1 to Thompson. The rejection is respectfully traversed.

Claim 7 depends from independent claim 1. Thompson fails to overcome the deficiencies of Dine and the FCH with respect to the above-mentioned features of independent claim 1. Therefore, dependent claim 7 is also patentable over the applied references based at least on its dependency, as well as for the additional features this claim recites. Accordingly, withdrawal of the rejection is respectfully requested.

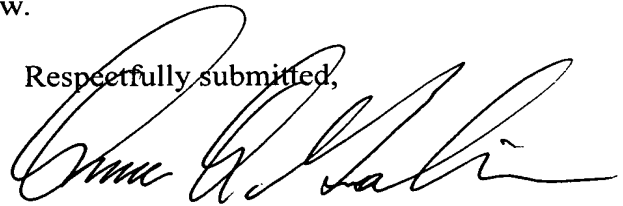
The Office Action rejects claims 10-12 under 35 U.S.C. §103(a) over Dine, in view of U.S. Patent No. 6,063,515 to Epp et al. (Epp). The rejection is respectfully traversed.

Claims 10-12 depend from independent claim 1. Epp fails to overcome deficiencies of Dine, the FCH and Thompson with respect to the above-mentioned features of independent claim 1. Therefore, dependent claims 10-12 are also patentable over the applied references based at least on their dependency, as well as for the additional features these claims recite. Accordingly, withdrawal of the rejection is respectfully requested.

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 3-18, 20 and 21 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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Attachment:
Request for Continued Examination

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